





A HALF MILE OF MAPLES ON THE FORT HARRISON ROAD, NEAR TERRE  
HAUTE, INDIANA.

BOARD OF FORESTRY

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INDIANA

ARBOR AND BIRD DAY ANNUAL

FOR THE

SCHOOLS OF INDIANA

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ISSUED BY

FRANK L. JONES

State Superintendent of Public Instruction



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## TO THE PUPILS IN THE PUBLIC SCHOOLS OF INDIANA.

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We are pleased this year to send you a new program for the observance of Arbor Day. You will find it much more attractive and interesting than the programs of previous years. This little volume contains several excellent pictures of beautiful trees and shows how they may be used in decorating school grounds. Do not fail to compare the school premises having beautiful trees growing about the schoolhouse with those having nothing to adorn them. If your school ground is not already like one of the best of these shown in the pictures, will you not take immediate steps to see that different varieties of trees are grown upon your school lot, and that the children who come after you as pupils in the school may have the benefit of the beautiful shade and the adornment which goes with trees?

The excellence of the Arbor Day publication this year is due to the Secretary of our State Board of Forestry, Mr. William H. Freeman. He has spent many days of valuable time in the preparation of the work and the program. He is greatly interested in the promotion of tree culture and thinks that the best way to do it is to interest the children in the public schools so that when they become the men and women of this commonwealth they will influence legislation to the extent of encouraging and requiring the preservation of our native trees and the growth of new forests.

I hope that Arbor Day, this year, will be observed with pleasure to all school children and profit to Indiana.

Very truly,

FRANK L. JONES,  
State Superintendent of Public Instruction.



## ARBOR DAY PROCLAMATION.

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STATE OF INDIANA,     )  
EXECUTIVE DEPARTMENT.   )

To the People of Indiana:

Following a custom which has increased in interest with each succeeding year since its adoption, I hereby designate October 24, 1902, as

### ARBOR DAY.

The rapid disappearance of our forests is awakening the public conscience to the fact that the time is present when urgent, intelligent and practical efforts should be made to restore, in some measure, at least, the generous gifts which nature bestowed, but which have been swept away to provide for the constantly increasing demands of a constantly increasing population.

In the celebration of Arbor Day the schools of the State should manifest special interest by the introduction of appropriate essays, songs and recitations, as well as by the planting of trees, shrubs and vines. Children should also be advised of the necessity for the protection and multiplication of song birds by all practical means.

In the planting of trees on school grounds it is suggested that, among others, one should be in memory of the late President McKinley, and another as a memorial to the late Governor Mount, whose great nature was in harmony with the woods and fields in which he spent the larger part of his honorable life.

The people have a vital concern in the propagation of forestry, and I earnestly recommend that Arbor Day be made an occasion for the further beautifying of public grounds and highways, thus bequeathing to succeeding generations an heritage of immeasurable value.

Done at the Capitol in the city of Indianapolis, this 4th day of July, 1902.

WINFIELD T. DURBIN,  
Governor.

UNION B. HUNT,  
Secretary of State.

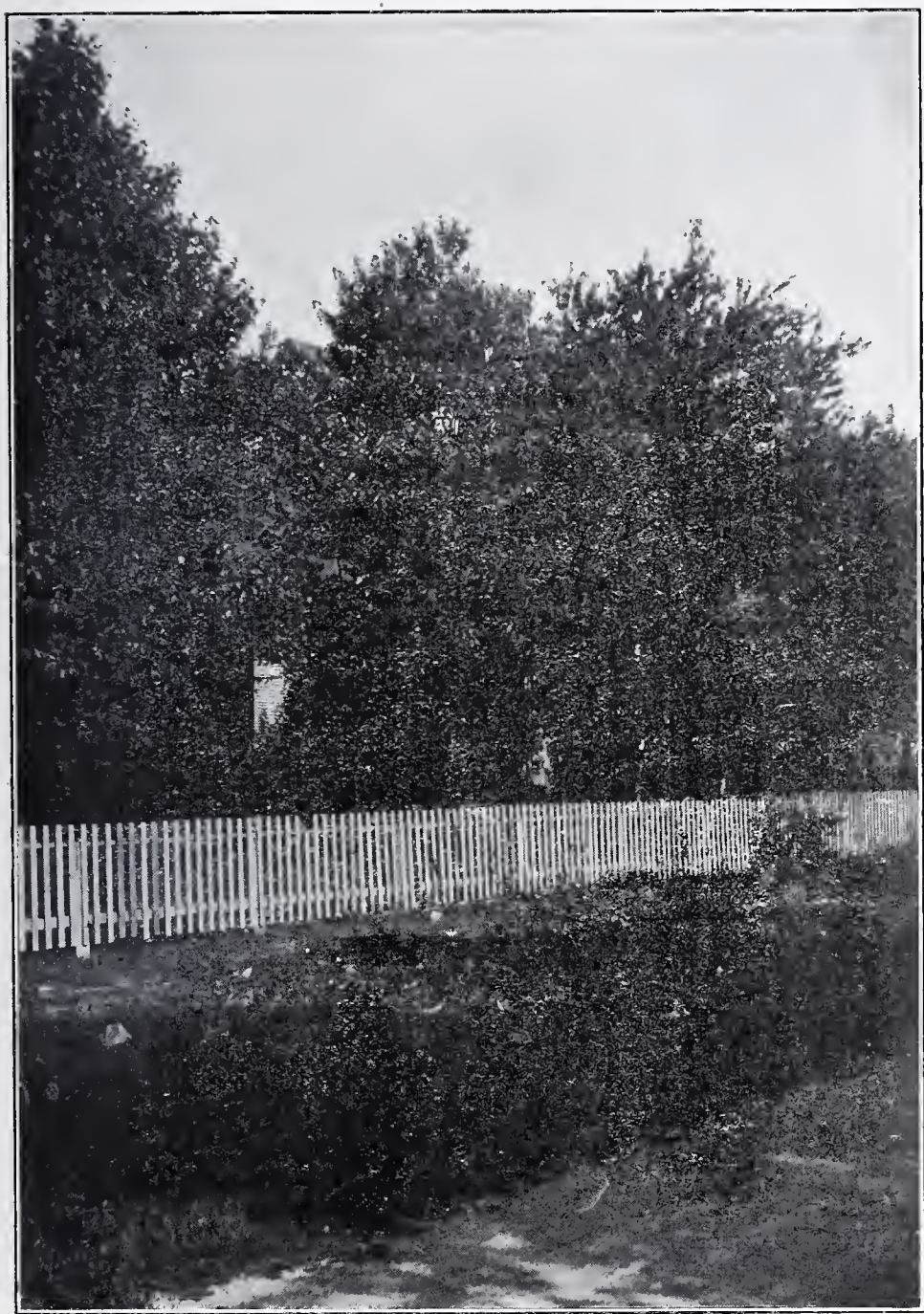


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DISTRICT SCHOOL NO. 2, WEA TOWNSHIP, TIPPECANOE COUNTY. A VIEW  
OF ONE SIDE OF THE SCHOOL GROUNDS.





SCHOOL DISTRICT NO. —, SUGAR CREEK TOWNSHIP, VIGO COUNTY, INDIANA.



## HISTORY AND ORIGIN OF ARBOR DAY.

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The first to call attention in this country in an impressive manner to the value and need of trees, because of their beauty and adaptation for ornamental purposes, and their value to all classes of people in the general welfare, was Mr. George P. Marsh, who, for many years, represented us at the courts of Italy and Turkey. It was during his residence at these places that he saw the needs, and the subject was impressed on his mind.

In Europe, Mr. Marsh found the governments making active endeavors at great expense to renew their forests, which had been greatly depleted. He found the forests to be the most cherished possessions, and regarded as the most valuable product of the soil. He also found schools and colleges established for the training of men for the successful cultivation of forests, and saw the growing of trees in forest masses reduced to a science and established as one of the prominent departments of the government.

His observations led Mr. Marsh to write his publication entitled "The Earth and Man," containing the excellent chapter, "The Woods," to which we are indebted for the awakening of the people to the importance and necessity of heroic efforts toward forest conservation.

It was about this time that a practical movement was inaugurated by the late Hon. J. Sterling Morton, then Secretary of Agriculture, for tree planting in Nebraska. It was the thought of this pioneer of the plains, who knew and felt the value of trees about the home, to enlist his fellow-people throughout the State in the work of tree planting on one and the same day. This movement resulted in the establishment of Arbor Day for the State of Nebraska, and in the issuance of a proclamation by the Governor of that Commonwealth recommending its observance by tree planting throughout the State.

At an annual meeting of the State Board of Agriculture at Lincoln, Neb., January 4, 1872, the Hon. J. Sterling Morton introduced the following resolution, which was unanimously adopted:

Resolved, That Wednesday, the 10th day of April, 1872, be and the same is hereby especially set apart and consecrated for tree planting in the State of Nebraska, and the State Board of Agriculture hereby name it Arbor Day, and urge upon the people of the State the vital importance of tree planting, and hereby offer a special premium of \$100 to the agricultural society of that county in Nebraska which shall upon that day plant properly the largest number of trees; and a farm library of \$25 worth of books to that person who, on that day, shall plant properly, in Nebraska, the greatest number of trees.

Over a million of trees were planted in Nebraska on the first Arbor Day, April 10, 1872.

In 1875 the Governor of Nebraska, by public proclamation, set apart the third Wednesday of April as a day to be observed in the planting of trees. Annually thereafter other governors made such proclamation until the winter of 1885, when the Legislature passed the act which designates the 22d of April, birthday of Mr. Morton, of each year as Arbor Day, and making it one of the legal holidays of the State.

Then in 1895 the name and the fame of Nebraska was further recognized and fixed by the following joint resolution which was approved by the Governor, April 4, 1895:

Whereas, The State of Nebraska has heretofore, in a popular sense, been designated by names not in harmony with its history, industry, or ambition; and

Whereas, The State is pre-eminently a tree-planting State; and

Whereas, Numerous and honorable State organizations have, by resolution, designated Nebraska as the "Tree Planter's State;" therefore, be it

Resolved, By the Legislature of the State of Nebraska, that Nebraska shall hereafter, in a popular sense, be known and referred to as the "Tree Planter's State."

At the same session, and as an outgrowth of the same sentiment, the following joint resolution was also adopted:

Whereas, The adoption of a State floral emblem, by the authority of the legislature would foster a feeling of pride in our State and stimulate an interest in the history and traditions of the commonwealth; therefore be it

Resolved, That, the senate concurring, we, the legislature of Nebraska, hereby declare the flower commonly known as the "Golden Rod" (*Solidago serotina*) to be the floral emblem of the State.

Approved April 4, A. D. 1895.



It is estimated that, because of Mr. Morton's efforts, more than 800,000,000 trees are beautifying the State of Nebraska alone. Minnesota first observed Arbor Day in 1876, in which year 1,500,000 trees were planted. The States of Michigan, Iowa, Kansas, Ohio and Indiana followed in succession. Michigan passed an Arbor Day law in 1881 and Ohio in 1882. In most all the States Arbor Day is recognized and encouraged by the civil authorities.

Arbor Day was first inaugurated in Indiana in 1884, but the day was not given general recognition until October 30, 1896. Since that time it has been observed annually on the last Friday in October by direction of the civil authorities.



## TO THE SUPERINTENDENTS AND TEACHERS OF INDIANA.

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The general neglect and failure to ornament school grounds by the planting of trees and flowers has not escaped notice. In many instances effort toward improvement has been made. I am satisfied that the sentiment in favor of school ground adornment is increasing and is being largely aided by Arbor Day tree planting.

It is one of my well-established beliefs that school grounds should be made the most attractive places possible. (Man's tastes and character are mostly fashioned by his surroundings, especially those incident to his early training. The better tendencies of mind and heart are drawn from environments marked by purity, taste and refinement. Beautiful surroundings make the school itself more attractive. A beautiful school yard in city, village or country means improved home yards and lawns, and an added interest and more ready aid from the patrons.

Pupils enlisted in the improvement and ornamentation of school grounds have inculcated in them a spirit which makes them more loyal to the school and its interests, and affects them in their home conduct. The feeling instilled by this work in the school will lead to a broader, loyal citizenship when manhood and womanhood is reached.

The schoolhouses of the State in the main are neat, substantial structures, but there is a general lack of school yard improvement. In the country it is exceedingly rare that an improved school yard is found. They are, in many instances, bare, bleak and uninviting. It seems to me a most grievous wrong to house and educate children for the greater part of the year amid such environment.

The lack of school ground adornment is not due to causes evident at first sight. It can not be attributed to poverty or lack of an appreciation of the beautiful; neither can it be due to educational indifference, for the people of Indiana are cordial in their support of schools and institutions of learning. The cause is due to the failure to appreciate the importance of comfort and beauty





DISTRICT SCHOOL NO. 1 , WEA TOWNSHIP, TIPPECANOE COUNTY, INDIANA.



DISTRICT SCHOOL NO. 8, PAWPAW TOWNSHIP, WABASH COUNTY, INDIANA.  
A MODEL BUILDING WITHOUT SCHOOL-GROUND EMBELLISHMENT.





in the attainment of an education, and the relations of the pupil and the natural world.

The common error that pupils will not allow trees and shrubs to grow on school grounds should never be given credence. If any such disposition is manifested, it is an indication of an unnatural spirit of childhood and a positive evidence that trees should grow on the grounds.

The protective feature should be a good reason for school ground tree planting. A school ground so situated as to lack protection from inclement weather subjects its occupants to exposure. The winter gales, zero blasts and scorching suns beat with unchecked violence, causing discomfort and confusion to the pupils and teacher. The teacher is put to the test of contriving methods by which no pupil shall endure more than his share of exposure and still maintain the good order of study.

Besides the benefits mentioned, there is an educational benefit derived from trees. The selecting, planting and growing of trees on the school grounds will impart a knowledge of the principles and methods of such work. To plant a tree is not all there is to be done. It should be cultivated and cared for in an intelligent manner, and much information of usefulness will be acquired in doing this. )

I sincerely trust that superintendents and teachers will make Arbor Day tree planting extensive and systematic, and that an intelligent method will be pursued and energetically executed until our school grounds shall be ideals of beauty and protection, thereby exemplifying the saying of Homer, "When we plant a tree, we are doing what we can to make our planet a more wholesome and happier dwelling place for those who come after us, if not for ourselves."

There are instances where the school grounds have enough trees on them. In that case let the Arbor Day program be devoted to tree culture and the proper care of the trees on the ground. It might be arranged to have pupils plant trees at their homes, along the public roads and on public grounds for report on Arbor Day. Ideas of pruning, grafting and budding trees could be introduced and practical lessons given.

W. H. FREEMAN,  
Sec'y State Board of Forestry.

## ARBOR DAY.

In the early autumn,  
 When the leaves begin to fall  
 From off the pretty saplings  
 And the other trees so tall,  
 Is when I like to look around  
 To find some lonesome tree,  
 And take it up and plant it where  
 It may have company.

On the cherished play-ground  
 Where we passed our morning life,  
 And where the playful sunbeams  
 Chased away false pride and strife,  
 I think it is a fitting place  
 To plant a little grove,  
 And thus afford the little folks  
 A share in Nature's love.

In the coming seasons  
 Will the shadows on the wall  
 Portray a perfect picture  
 Of the life we would recall;  
 And when the winds of night-time  
 Chance to murmur soft and low,  
 They will the branches tell of that  
 Which happened long ago.

Also, will the children,  
 While they study, while they play,  
 Be elevated greatly  
 By the songbird's roundelay;  
 For they will find true happiness  
 Among the merry birds,  
 And thus a lesson will be taught  
 By signs instead of words.

—Walton F. Stover.

## HISTORY AND CHARACTERISTICS OF SPECIAL TREES TO PLANT FOR ORNAMENT.

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### THE OAKS.

There are about thirty species of oaks growing native in the United States. Of this number seventeen are known to be growing native in Indiana, though a few of the species are rare and very local.

The oaks, as a whole, are the most useful trees for general requirements, and this fact has resulted in their almost total extermination. The oaks possess ornamental qualities much beyond the estimate generally accorded them.

The ancients revered the oaks and attributed to them the mystic power to foretell coming events. The oaks are connected with the establishment of the two oracles of Jupiter at Dodona, and in the Lybian oasis by the two black doves which flew simultaneously from Thebes in Egypt. Tennyson, in his "English Idyll," characterized the lover as "The Talking Oak" in exclaiming the knowledge told him of his sweetheart, Oliva. Hercules, it is remembered, carried an oaken club.

The oaks for ornamental plantings can be purchased from reliable nursery firms, where they have been given a series of transplantings and root prunings which insure their success when planted at large sizes on lawns and in parks. The seedlings may be grown from acorns in a home nursery bed and transplanted at an age of two to three years to their permanent places with quite good success. The seedlings may also be taken from the forest and transplanted to their permanent places, but if too large a tree is transplanted success can not be assured.

## THE BRAVE OLD OAK.

A song to the oak, the brave old oak,  
 Who hath ruled in the greenwood long;  
 Here's health and renown to his broad green crown,  
 And his fifty arms so strong.  
 There's fear in his frown when the sun goes down,  
 And the fire in the west fades out;  
 And he showeth his might, on a wild midnight,  
 When the storms through his branches shout.

In the days of old, when the spring with cold  
 Had brightened his branches gray,  
 Through the grass at his feet crept maidens sweet  
 To gather the dew of May;  
 And on that day, to the rebeck gay  
 They frolicked with lovesome swains;  
 They are gone, they are dead, in the churchyard laid,  
 But the tree, it still remains.

He saw the rare times when the Christmas chimes  
 Were a merry sound to hear,  
 When the squire's wide hall and the cottage small  
 Were filled with good English cheer.  
 Now gold hath the sway we all obey,  
 And a ruthless king is he;  
 But he never shall send our ancient friend  
 To be tossed on the stormy sea.

—Henry Fothergill Chorley.

## WHITE OAK.

The white oak stands first of all in usefulness and noble characteristics. It fitly symbolizes some of the noblest traits of character, and its massive trunk and giant branches, when fully grown, embody that stability and strength which we admire in man. By its deep rooting it anchors itself against winds and tempests and grows for centuries. There are now standing in New England some white oak trees which are known to have been of good size when the struggle for independence was waging.

The white oak grown in open grounds is an object of scenic grandeur. Its majestic head is a mighty dome of beauty and its smooth body and limbs compel admiration. It grows in all ordinary soils and flowers in May and June.







DISTRICT SCHOOL NO. 4, UNION TOWNSHIP, TIPPECANOE COUNTY. A TYPE  
OF THE SCHOOL BUILDINGS AND GROUNDS OF BLEAKNESS  
FOUND IN THE STATE.



WHITE OAK GROWING NATURAL IN BUTLER COLLEGE CAMPUS,  
IRVINGTON, INDIANA.



It seems peculiar in early spring to see these great gray trees putting forth leaves as tender tinted and pink as many a timid flower. In their autumn childhood the leaves have a deep, ruddy, wine hue.

The leaves of the white oak are short-stemmed, with an acute base three to nine obtuse, entire, oblique lobes with a persistent clinging tendency in winter. The leaves are pubescent when young, but are smooth and bright green above.

The acorns grow in the axils of the leaves and are ovoid, oblong, and set in a shallow round cup. The seeds ripen in September and October, at which time they should be cured and stored by the process of stratification for planting in the spring in nursery beds.

#### BLACK OAK.

The black oak is a very common oak, and is usually found in connection with red oak, hickories and maples. It is frequently taken for red oak, but may be distinguished therefrom by its yellow inner and nearly black, scaly and rough outside barks. It grows on either dry or wet uplands. Single trees grown in open ground are models of sylvan beauty. This tree as an ornamental specie is very greatly underestimated. It flowers in May and June.

The leaves are deeply pinnatifid and much like the red oak. In spring the leaves are red, but turn to silvery green when the tree blooms. They are rich red in autumn hue, but do not have the vivid touch of color so characteristic of the scarlet oak. The acorns are nearly round and set in a deep scaly cup and ripen in September and October. The requirements for planting are the same as for the white oak.

#### RED OAK.

The red oak is well distributed over the State and grows in moist, cool localities. It is closely related to the black oak, but easily distinguished therefrom by its more upright habit, smooth, lighter-colored bark, and by its shallow-cupped acorns. Planted in open ground it forms a majestic rounded head, with clean, smooth limbs. It is a rapid grower, but a little difficult to transplant; hence well treated trees should be selected for planting. It flowers in May and June.



The leaves of this tree are smooth, thin, oblong, pinnatifid, sometimes very much so, eight to twelve sharply toothed lobes and turn dark red after a frost. Usually its foliage is dense, but it has no semblance of heaviness. The unequal lobes of the leaves, with bristle-pointed teeth, give a light, pleasing appearance to the tree. They also lack the brilliancy of the foliage so charming to the scarlet oak. When growing under favorable conditions the red oak produces a very admirable effect. It has been the most successfully grown oak in Europe, because it readily adapts itself to varying climatic conditions. The acorns are oblong-ovoid and are set in a large shallow cup with fine scales and a narrow raised border. The acorns are almost sessile.

#### SCARLET OAK.

The scarlet oak is generally found throughout the State, but more abundantly in the southern part. It is found in connection with the black oak, but is distinguished from that tree by its much more finely divided branches and rough, grayish-brown outer and inner reddish bark. The scenic effects of this tree alone should commend it. Its leaves are almost skeleton in outline and are intensely beautiful in their autumn hues of scarlet.

All minor characteristics of the scarlet oak seem to be buried in the bright brilliancy of its autumn foliage, which has the most exquisite tint displayed by any of the oaks. The leaves at unfolding are as red as in the instances given for the red and white oaks. The scarlet oak at all times is a charmingly gay tree for landscapes and surpasses accounts given of it.

This tree contrasts beautifully with the black oak in foliage, which takes the sober shades of buff and orange. The leaves of the scarlet oak ordinarily are bright green and shining above, broadly oval, deeply pinnatifid, five to nine lobes, slightly cut-toothed with bristle tips, rounded notches and slender, yellow midrib. The acorns are roundish, depressed, one-half inclosed in a top-shaped, coarsely scaled cup, and are located in the axils of the leaf scars of the preceding year.



## PIN OAK.

The pin oak is a very handsome, medium sized tree, mostly found in the southern part of the State, although it grows sparingly in the northern part. It is especially adapted to wet, rich soils of streams and swamps. It is a moderately graceful and ornamental tree for lawn and avenue planting, though it becomes straggling with age. It has a peculiar beauty, because of its drooping branches and dark greenish brown, rough, slightly furrowed outer, and reddish inner barks. The leaves are oblong deeply pinnatifid, sharply toothed, bristle-tipped, divergent lobed, rounded notches and both sides bright green. They strongly resemble those of the scarlet oak, but they are smaller and the sinuses extend almost to the midrib, which, though small in variation, changes the tree to a light, delicate, pretty appearance. The autumn hue is a rich red. The great abundance of galls has a bad effect in estimating the value of the pin oak as an ornamental tree. The acorns are globular, set in shallow, saucer-shaped cups, almost sessile and found in the axils of the leaf scars of the preceding year.

## THE MAPLES.

The maples are among the most desirable trees for ornamental planting found in the State. There are about ten species growing native in the United States, and of this number seven are known to be native in Indiana. They possess qualities which make them excellent shade trees. Some of the species are rapid growers, while others are not. They have peculiar characteristics of soil adaptations and moisture that must be taken into consideration when they are planted. The flowers are terminal-racemes.

"The lovely maple, fair is seen  
Emerald robed, crowned sylvan queen."

## SUGAR MAPLE.

The sugar maple is found naturally abundant throughout the State in all rich, upland soils. It is a great favorite for the street and home ground planting. This tree may be made to have several forms of crown, not by trimming, but by the manner of plant-

ing. In open ground it forms a broad, obicular top; when crowded it forms a cylindrical crown, and in natural conditions a symmetrical head. In all forms the crown is well balanced and erect. No other tree is so neat and clean from the time of leaf expanding till the end of its autumn foliage, nor so free from attacks by insects and worms. It is hardy and recovers from shocks which would insure death to most species. This tree should be guarded from tree butchers under the assumed name of tree trimmers. Most frequently they are best when left alone.

The sugar maple flowers from February to April, according to season and soil, and the seeds ripen in September and October. The flowers hang in umbel-shaped clusters at the time of leaf expansion in the spring. The fruit is winged-shaped with strong tendencies to form right angles.

The sugar maple bears planting well, but trees of large size should have had the transplanting treatment before the permanent planting, the same as the oaks, though seedlings may be grown from seeds sown in a nursery bed in the spring after they have been stored in sand during the winter.

The leaves are deeply three to five acute-lobed, few-toothed, rounded notches, base hearted, glaucous beneath, smooth and green above.

#### RED MAPLE.

The red maple is very common throughout the State in low, wet soils. It is the most brilliant tree in autumn. The tree flowers in March and April and the seeds ripen in May and June. The red maple has a clearer head and darker aspect than the sugar maple. Its early blossoms are attractive and its autumn foliage is a perfect banquet of color.

The red maple thrives excellently around country homes where the moisture and drainage conditions are more suited to it than in cities. It is a surface rooted tree, and hence not adapted to the conditions found where paving and gas and water piping prevail. It is an easily transplanted tree and large trees can be transplanted successfully.

The leaves of the red maple are cordate at the base, cleft into three to five acute-notched, irregularly toothed lobes. The leaves





A SUGAR MAPLE NATURAL FORMED IN FARMYARD OF ANDREW BLACK,  
NEAR GREENCASTLE, INDIANA.





LIN, OR BASSWOOD, GROWING NATURAL IN BORDER OF FOREST NEAR  
ANDERSON, INDIANA.





are whitish underneath and smooth green above, but turn bright crimson in early autumn. The seed is winged and inclined to form a right angle.

### WHITE ELM.

The white elm grows native throughout Indiana in soils of every character. It has considerable sentiment attached to it. The elm is associated with the "Well-Sweep" and "The Old Oaken Bucket." It was of the elm that Lincoln exclaimed, when returning from the army encampment at Washington he stopped his carriage to admire the grand tree, "Such a tree is one of the noblest objects of creation!" Bryant was inspired by the elm to an expression in the poem, "Forest Hymn," and Holmes said, "The best poems I have ever written are the trees I have planted."

There is a grandeur of thought in conserving and planting these glorious sons of the forest. No other tree combines so much vastness, grace and beauty as the elm. It bends to the wind and thus is less broken by storms that injure other classes of trees. It is well adapted for wide avenues, but the lines should be such that they will not be cramped for room to spread. It has more diversity of form than any other tree and should never be topped, but allowed to grow naturally, or it will become ill-shaped.

The elm flowers in April in numerous clusters fringed with long trimmed spray, which becomes so dense at times as to obscure the branches. The seed ripens in May and June. They are light and chaffy and are easily blown hither and thither by the winds. The leaves are about two or three inches long, oval, abruptly sharp pointed, sharply serrated, pubescent beneath when young, but soon smooth.

The tree is most beautiful in June, soon after the leaves are expanded, but its autumn foliage possesses no brilliant hues. It increases in beauty with age. It is fairly easy to transplant.

"The elm is a kindly, goodly tree,  
 With its branches bending low;  
 The heart is glad when its form we see,  
 As we list to the river's flow.  
 Ay! the heart is glad and the pulses bound,  
 And joy illumines the face  
 Whenever a goodly elm is found,  
 Because of its beauty and grace."

## WHITE ASH.

This species of tree is distributed generally over the State in rich soils. It forms a very attractive picture of rare grace and beauty in the forest. When not crowded, it grows a stout body with a stately, widespreading head. The limbs are smooth, clean and numerous, but not twiggy, and begin low on the body. The compound leaves form a delightful shade, but the two faults and drawbacks are that they put forth late and fall early. Its foliage is free from attacks by insects. The ash is a good tree to alternate with maples.

The leaflets, usually seven to nine grouped, are stalked lance-oblong, pointed, shining above, pale beneath and somewhat or entire toothed. The white ash flowers in May and the seeds ripen in September and October. It has stamens and pistils borne on separate trees, and thus only a part of the trees seed. The seeds are winged. The bark on the body of the ash is gray, furrowed, grayish-green on the branches and the buds are rusty in color. This tree is extensively cultivated for ornament.

## THE LIN.

The lin is well distributed throughout Indiana in all rich soils. All persons who see the desirable points in trees for shade find it an attractive tree because of its generous, well-shaped leaves and landscape effects. The fragrant blossoms are succeeded by the small globular one-seeded fruit, which ripens in September and October. It is said of the lin that for ornamental purposes it has no equal, and is largely cultivated for landscape ornament.

Whether in bloom or in fruit the lin is an interesting study. It possesses two distinct shades of green—the dark green of its leaves and the light apple green of its bracts. The leaves are large, more or less heart-shaped, soft and downy, green and somewhat thick. The flowers are cream colored and fragrant, with five spatulate oblong petals hanging in clusters from a slender peduncle.

## THE YELLOW POPLAR.

Naturally this tree is found in all parts of the State. In the early history of Indiana it was one of the most numerous and largest of trees. It and the elm are very much in contrast. In forests it is tall and stately of trunk, but when transplanted from the nursery on open lawns and parks it becomes a tree of architectural and symmetrical beauty, and is frequently clothed to the ground. It harmonizes well with dressed grounds and artificial surroundings. The lively green leaves of summer and the orange shades of autumn make it an attractive tree for all the season.

In the spring, when covered with its tulip-like flowers, it is a pleasing sight. Freely and unconsciously it throws its blooms out as though it were some lively wayside flower. In cultivation the tree is a great favorite, and when young has a high-bred expression. Persons desiring a fine ornamental tree, clean and attractive, will find it worthy of consideration.

The trees for planting should have been given the transplanting process, though they may be grown very successfully from cuttings or from seedlings produced in a nursery bed.

The poplar flowers in May and June, according to season and soil where found. The flowers are tulip-shaped, large greenish-yellow, growing on stout peduncles. The fruit is a pointed cone and hangs on until autumn. The leaves are large, smooth, three-lobed, with the end of one lobe seemingly cut off; stipules are light colored, large oblong attached entirely around the stem.

## THE SWEET GUM.

The sweet gum is common to the southern counties of the State, but is rarely found in the northern part. It is a tree somewhat resembling the sugar maple, but has a conical head and widely branching limbs inclined upward at the ends. The bark is very rough and of a reddish brown color. The gum is a rapid grower, adapted to most any soil, and because of the peculiarity of all parts it is a most excellent tree for planting on lawns, parks and avenues.

This very beautiful tree has many distinctive features. It seems

to evade all conventional patterns and is purely chaste and original. Every year finds it more extensively planted, and in beauty and outline it is said to be unrivaled. It is almost free from the ravages of insects and borers.

In autumn the foliage turns a rich orange and crimson color, and the curious shaped twigs with corky ridges add to its great beauty. The leaves are roundish, star-shaped, five to seven-pointed lobes, dark green, smooth and shining. The tree flowers in April and May and the fruit ripens in autumn. The tree is easy to transplant.

### RED BUD.

The red bud grows abundantly throughout the State in almost every variety of soil, but most thriftily in rich loams. It is found in sizes from a small shrub to a tree of twenty to thirty feet high. It forms a handsome little tree with smooth bark, and in the springtime is aflame with bright, red-purple flowers; hence it is very attractive on lawns. The flowers hang in sessile clusters before the leaves appear and cover the twigs entirely. The tree is scarcely less beautiful in autumn than when it is in flower.

The leaves are broad, heart-shaped, acutely pointed, dark green, smooth and glossy. Trees should have been transplanted before they are set on the lawn or any other permanent place. It is a rapid growing tree when under cultivation, and hence a valuable tree to plant for parks and lawns.

### FLOWERING DOGWOOD.

The flowering dogwood is found in all parts of the State, but more abundantly and larger in the southern counties. It is a tree conspicuous for its flowers, and its autumn foliage is just as attractive; hence it is a most admirable tree for ornamental purposes. It flowers in the spring, making it a most striking tree in a forest or on the lawn.

There are few persons who do not appreciate the beauty of the dogwood when its bloom whitens the woods and banks in the spring. The involucre of the flowers unfold before the leaves are



fully developed and can be seen at a great distance waving their cheery message of spring.

This tree should be more highly cultivated and planted. For roadside planting it can not be equaled. A variety with pink flowers is now cultivated in nurseries. The leaves are ovate, pointed, acute, bare and smooth on both sides. The bark is reddish tinted and rough, adding to the other ornamental features which the tree possesses. Trees of any size should have been given a good transplanting process before planting on lawns or open areas. Seedlings grown in the home nursery and transplanted to permanent places when three or four years old will do very well.

### SERVICE-BERRY.

The service-berry is classed as a shrub, but it reaches the size of fifty feet in height and twelve inches in diameter under cultivation, and hence is a valuable tree for lawn ornamentation. It grows in all parts of the State, in both wet and dry soils. It is among the first trees to bloom, and is most conspicuous because of its many white flowers hanging in racemes of great abundance.

There is no passing it by; it is one of the spirits of nature that the dullest eye must perceive and admire. The fleecy white petals wave and beckon as if to attract attention and at the season of the year when there is but little foliage. It is a sign that grateful spring is on the way. There are many varieties of this specie.

The leaves are either narrow, oblong or roundish and in clusters with bracts, bright, green and smooth. The fruit is a small purple berry, and very edible. It ripens in June. This tree is easily transplanted and may be grown from seeds in a home nursery bed.

## INSTRUCTIONS FOR PLANTING TREES.

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The planting of forest trees for shade and ornamental purposes is poorly done in most instances. Not enough caution is exercised in the selection of the kinds and sizes of the trees to be planted, and the manner of taking up and transplanting. The preparation of the soil, and the care and protection of the tree after planting, are essentials which receive even less attention.

In view of the fact that it takes a long time to grow a fine shade tree, it is extremely necessary that the tree planted shall have qualities which fit it for the purpose for all time. If a tree is planted and in the course of time proves worthless and unsuited, it can not be replaced in a day. All the time and effort spent in its propagation will be lost and it will take years to replace it with a good tree.

Select trees of the longest lived species and the most hardy against all injuring conditions. The white, scarlet, red, black and pin oaks, white elm, white ash, sugar, Norway and red maples, lin, yellow poplar, sweet gum, flowering dogwood, service-berry, red bud and the pines, especially the long-leaved and arbor-vitae, are the most suited. No better or finer trees for shade can be found than these natural forest trees rightly planted and cultivated. They are slow in reaching sizes of usefulness, but they are both beautiful and permanent.

The trees selected for planting should not be of over three or four years' growth, if they are seedlings planted directly from the nursery bed. If older ones are selected for planting, they should have been given a series of transplantings and root prunings.

It is an utter mistake to plant a tree of seven or eight years' forest growth, which has never been cultivated through a series of transplantings. The usual method of going to the forest, digging up saplings two or more inches in diameter, stumping them off at the tops, taking them up with only a few feet of stumped

mangled roots, planting in scantily prepared places and soil, and leaving their progress to fate, will never produce satisfactory shade and ornament.

Seedlings of three or four years' growth, taken up carefully so as to preserve almost entire the small fibrous root system, transplanted in well prepared places and soil, and tended with reasonable care, will in a short time develop into finely formed trees.

It is estimated that most of the forest tree seedlings, of from three to five years' growth, have from two to five hundred feet of root system. In digging up these large saplings, the fibrous system, which is the necessary part to the life of the tree, is not taken up. The larger roots are only the carriers of the nourishment gathered by the fibrous roots. A tree taken up and transplanted in this condition must stand several years until a fibrous system is re-established, and suffers in most cases to the extent of death before this is done.

The seedlings, if planted in the spring of the year, should be placed in the ground just as early as the trees can be procured and the soil will allow working. The excavations should be sufficiently large for the setting of the roots without cramping. A hole three or four feet square and two or three feet deep is deemed ample. The excavations should be made sufficiently extensive to afford the rootlets free growth for nourishment, without being hampered by the hard walls of the cavities, and should be filled with good, rich soil.

When planted the trees should be mulched with tanbark or rotten straw to a depth of three or four inches to prevent a too rapid evaporation of the moisture, and also to keep down the weeds from around the trees. The weeds should be kept down for a distance sufficiently extensive to prevent the absorption of the substance from the soil and the smothering of the trees.

Whether trees are planted in the spring or fall they should receive the same treatment, but, owing to the facts of water settling in the excavations and the liability of freezing and thawing, I think early spring planting preferable.

Where trees are exposed to injury by reason of stock or other numerous agents, they should be protected by boxes as is shown in Figs. 1 and 2, which are simple, inexpensive and sufficient for the purpose.

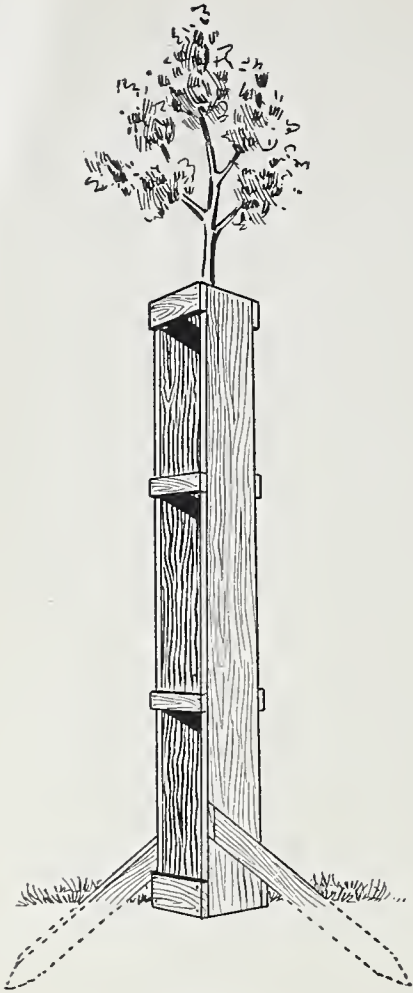


Fig 1.



Fig. 2.

Trees selected and planted as I have indicated will seldom fail in good results. There is no reason why this can not be done, as seedlings of nearly all the species, except the evergreens, may be found in most every locality in great abundance and may be secured for the asking. They may be taken up and transplanted at once without the injuries incident to shipping.

Trees should neither be planted in too wet or too dry soil. If in time of drouth, the holes should be dug a few days before and filled with water. The trees should not be planted, however, until the water has soaked away and moistened the soil suitably.

Too frequent and excessive artificial watering will be injurious to trees. If sufficient rain does not fall, the trees should be watered moderately every four or five days.







A WHITE ASH NATURAL FORMED NEAR GREENCASTLE, ON THE FARM OF  
ISAAC HAMMOND.





A YELLOW POPLAR GROWING NATURAL IN OPEN FOREST NEAR  
GREENCASTLE, INDIANA.



The soil should be finely pulverized so that it will pack closely around the roots. Straw or manure should never be put around the roots, as they will not pack closely, and thus the tree is not firmly imbedded in the soil.

The trustees or school directors can employ a party to plant the trees for a small sum and to look after them until they are successfully growing, and there should not be a patron who would not lend his efforts to such a movement.

## SOME CAUSES WHICH INJURE TREES.

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In the observance of Arbor Day it is eminently fitting and proper that the attention of the young people should be directed to a few of the causes which are destructive to trees. It is mainly through ignorance that so many trees die after many years of growth. Many of these deaths are caused by the different insects, while others result from the evils of persons. If individuals can be taught to recognize these evils, and use their efforts against them, thousands of beautiful shade trees may be saved to a green old age.

The elm leaf beetle is the most pernicious insect that is known to attack the elm. This insect belongs to a plant-eating family closely allied to the cucumber beetle, and resembles it very much in appearance. It has only recently attacked the elm, but is spreading rapidly westward from the eastern States, and wherever found ravaging the elm the trees should be thoroughly sprayed with Paris green or London purple, as per instructions given below.

Among the common pests known to all are the different species of caterpillars. These insects are produced from the eggs of the various moths, which, it may be said, number seven distinct families of twenty-four species. The moths fly in the springtime, from about the first of May to the last of July. After fertilizing they lay their eggs in the crevices of the rough bark, where, in a few weeks, they hatch the caterpillars.

The annual caterpillar, which is the most commonly known, has the following life history: The moths fly in May and June, at which time fertilization occurs. In a few days the eggs are deposited in the cracks and crevices of the rough bark of trees. In about three or four weeks the eggs hatch, and the young caterpillars at once eat the shells of the eggs and remain for several days in circular clusters, heads turned inward. They then disperse to



the crowns of the trees and begin the destruction of the foliage. They keep up this work of destruction until September, when they come to the ground to mature to moths in cocoons under leaves, wood, bark, or, in fact, any place they may hide. In the spring they emerge as moths and repeat their life process.

Another caterpillar very destructive to the foliage of shade and fruit trees is the white-marked tussock moth. It is very abundant in early summer, and is seen suspended from trees by its silken thread, traveling over sidewalks, creeping up the sides of houses, entering windows and doors in search of food, crawling on the fences; in fact, it makes itself conspicuous everywhere. It is a very beautiful creature with its bright colors, tufts and pencils of hair. The moth produced by this caterpillar is quite inconspicuous in appearance. The female is wingless and never leaves the cocoon until after laying its eggs, when it drops lifeless from the cocoon. The cocoons are almost snow white, and the egg cover is froth-like in appearance on the surface of the cocoon. They are found on the trunks of trees, under cornices and other surfaces of similar character. Every one of these cocoons picked off and crushed under foot may prevent several hundred caterpillars the coming season. Autumn is the proper time to destroy the cocoons. The vast number of insects which injure trees is better appreciated when it is stated that between five and six hundred attack the oak; more than a hundred the hickory; nearly a hundred the maple; two hundred or more the pine, and hundreds the evergreens.

The following general remedies applied efficiently at the proper times will, in most instances, destroy the caterpillar pests:

1. Trenches, ten inches wide, twelve or sixteen inches deep, with vertical sides and holes four or five inches deep along the bottom at intervals of a yard, may be dug near the base of the tree, using caution not to injure the roots thereof. At mornings and evenings during moist, cool weather the trees can be jarred with a butting ram of some sort, well padded, so as not to bruise the bark in any way, and the worms will fall from the trees. In their attempt to regain the trees they will be caught in the trenches, when they may be scraped into the holes in the bottom of the trench and destroyed in a successful manner.

2. Grease bands may be painted around the trees at a distance of six or eight feet from the ground. The grease for this purpose

should be made of pine tar, resin and grease, in composition of 80 per cent. tar and 10 per cent. each of grease and resin. In order that these bands may be effective, the rough bark should be smoothed for about eight inches in width around the tree, and the mixture applied in a heavy coat so as to overcome the liability of the absorption of the grease by the bark. The bands should be kept fresh and active. Strips of cotton batting, tarred paper, or fly paper may be bound around the trees to act as grease rings. Do not use coal tar. These rings act very well in conjunction with the former process, as they will prevent the worms which escape the trench from again ascending the tree, and if applied before the eggs hatch will prevent the worms from spreading over the crowns of the trees.

3. The cocoons may be hunted from their various positions about rough bark, eaves of buildings, under dead leaves and wood, and destroyed.

#### SPRAYS FOR ALL INSECTS.

**Lime Water.**—Take one pound of pure unslaked lime and about seventy gallons of water. Slake the lime and stir into the water thoroughly until the quantity is of a milky fluid. Allow it to stand until the lime is deposited at the bottom, then spray the trees with the water. The same lime will do for three or four times. This remedy is very useful for insects in the larvae and pupal stages.

**Sulphur Solution.**—Take one part of potassium sulphide and five hundred parts of water. Mix the solution thoroughly, then spray the trees with the solution, and the caterpillars will at once leave the trees and the leaves will escape further damage.

**Arsenical Washes.**—Take one pound of Paris green or London purple and two hundred gallons of water, to which should be added a little flour or dextrin. Mix thoroughly in solution and stir constantly while spraying. This is one of the most valuable mixtures known, but as it is a poison many things will have to be considered before it is used. If it scorches the leaves it is too strong and must be further diluted.

**Kerosene Emulsion.**—Take one gallon of kerosene oil and half a gallon of boiling water, in which a pound of soft soap has been

dissolved. Constantly churn the mixture for ten minutes and gradually dilute it by adding eleven gallons of water. This mixture is a most valuable one for suctorial insects.

Bark scorching, stock, fire, carving, swinging, pruning and paving are other causes which tend to the destruction of trees. Bark scorching is an injury resulting from violent exposure of trees to the direct rays of the sun, and occurs on the west and southwest sides of the trees. It is indicated by the drying, roughing, splitting and falling of the bark. It may be avoided by shading the sides of the trees next to the sun with tree boxes or boards imposed. Trees affected should be smeared with a paste of clay and whitewash in mixture, or a paste of cow dung may be used.

Stock is harmful to trees by browsing on the twigs, gnawing the bark, breaking the branches and tramping the roots. Fire is a most damaging agent. The least fire heat will cause the bark to crack and peel off, though it may be some time after the damage before the fact is seen.

Leaves and rubbish should never be burned in such proximity that the heat may be felt to trees. The simple burning of the leaves of a forest will injure every tree around which the burning occurs. Inestimable damage is done trees where the leaves are raked into heaps and burned in the streets under the trees. The dying of thousands of trees in the cities may be attributed to this cause. The carving of the bark, swinging around small trees or swinging from the limbs of large trees cause injury. The fibers are strained and broken in the limbs to which the swing is attached, and the tree, after a few years, begins to decay generally. In small trees the swinging around them disturbs the roots and bends and breaks the fibers of the stem. Carving exposes the wood and forms a blemish, also a point for the attack of beetles, borers, and fungi.

Too much pruning is another cause of great injury to trees. Many trees now adorning the streets and avenues are sadly defective in limbs and body because of excessive and out of season trimming. Such trees are at the mercy of storms and extremes of every kind. A tree is a living organism and must be treated with care. The trimming should never be more excessive than clipping of stray branches or sapping sprouts. It is rare that the destructive wholesale topping results in anything near the beauty that nature herself would have formed. This is evidenced by the



fact that the finest specimens of trees are found in localities where the tree butcher is unknown. The time at which trinning may best be done is yet a matter of doubt, except that it should not be done at the time the sap is flowing freely. The times most universally agreed upon are early summer, June and early July, and in the autumn, after the wood is ripe. Prunings made at these times heal smoothly and leave less rotten wood.

Paving and the laying of gas and water mains in the cities are probably the most destructive influences to the successful keeping and growing of shade trees. The method of street improvement which has been most used is in every detail injurious to trees. When a street is paved and the walk is placed in from the street, the roots on both sides of the trees are destroyed almost to the stump. On each side of the tree a thick wall of concrete is placed and the roots are forbidden progress in search of moisture. The paved street quickly conducts the water into sewers and if the tree lives it must do so by accident. For the reasons given it is better to adopt a plan of street improvement which does not deprive the trees of almost their entire root system. The walks should be next to the street so that one side of the trees' roots are unharmed and free to perform their function. The reckless barking, chopping and abuse of trees by the workmen in paving should be prohibited.

Another feature of destruction in street paving is the cutting down of trees where they are in the way of improvement. Trees of many years' standing may be successfully transplanted to other permanent places if time is given property-owners to prepare them for removal. The plan of removal is as follows:

The preparation for removing trees should begin at least a year before the moving. At a distance of from four to eight feet from the tree, depending altogether on the size thereof, a circle should be dug around the tree to a depth sufficient to avoid damaging the roots. When this is done the earth should be removed from the roots next to the ring inward for about a foot or two. Use some kind of a wooden instrument for this, and be careful not to split or injure any of the fibers of the main root. The ends of the roots should be cut smooth, so that they will heal over quickly. Fill in the circle of space around the exposed roots compact with rich, loamy soil. Cover the whole with old rotten

straw as a mulch to prevent evaporation. Water well throughout the season. Stay the tree with ropes to prevent the wind from swaying or upsetting it. Let the tree grow during the summer in which time a fine network of rootlets will be formed, and will be the secret of success when the tree is removed.

The best time to remove a tree is in the winter, if it is a large tree, as then by pouring water on the ball of earth at the base it can be frozen compactly. The tree can then be pried loose and raised with little difficulty. If it is to be removed any considerable distance, it can be placed on a flat boat or sled and transported without injury. The ball of earth may be kept around the tree intact. If it is only to be removed a short distance, it can be lifted and carefully slid into position.

If the tree is small the removal may be made in the early spring, taking care when the tree is raised to bind the ball of earth with matting to prevent its crumbling away. It is urged that the moving be done in the winter or very early spring.

In making the excavation for transplanting the tree, make the hole large enough so as not to compress the roots in any way. Just prior to raising the tree from its original place, a portion of the top should be removed. I do not advise the exaggerated cutting away of the top, one-half to two-thirds being sufficient. When the tree is transplanted place the roots naturally, and fill in with good soil, not, however, rich, light, loamy soil, but heavy, rich soil, and water very freely while filling in, instead of tramping. Plenty of water will cause the soil to settle compactly around the roots, which is necessary.

Mulch the soil again with rotten straw and stay the tree again with ropes to prevent its swaying. Water well during the season. When one or two years have elapsed the tree will again have a foothold and growth will take place. This can be done with satisfaction and many valuable trees that have taken years and years to grow are saved in this manner.



## HISTORIC TREES.

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“The groves were God’s first temples. Ere man learned  
To hew the shaft, and lay the architrave,  
And spread the roof above them—ere he framed  
The lofty vault, to gather and roll back  
The sound of anthems, in the darkling wood,  
Amidst the cool and silence, he knelt down  
And offered to the Mightiest solemn thanks  
And supplication.”

In our own country, and in our own time, there have been, and still are, ancient trees intimately connected with our history as colonists and as a nation, and which command the reverence of every American. The following list includes some of the more prominent trees that have been consecrated by the presence of eminent personages, or by some conspicuous event in the history of our country. They all have a place in our national history, and are inseparable from it because they were so consecrated. A knowledge of the events associated with their memories can not but engender patriotic emotions in the breast of every true American citizen.

### THE CONSTITUTIONAL ELM.

When the members of the first Constitutional Convention met at Corydon, on June 10, 1816, to deliberate upon the articles of the organic law to be adopted for the government of the new State of Indiana, they held most of their meetings under the shade of a huge elm tree, on the banks of Big Indian Creek, a few hundred feet northwest of the rude State House, then located in Corydon. The old elm tree still stands in all its grandeur, being one of the finest specimens of our early forests aside from its historical significance. It spreads one hundred and twenty-four feet from tip to tip of its branches and is more than fifty feet high. It is cherished and protected by the citizens of Corydon as one of Indiana’s famous historical landmarks.



CONSTITUTIONAL ELM CORYDON, INDIANA.



## THE BIG TREE.

Probably the most ancient of these living links of the present with the past was "The Big Tree" that stood on the bank of the Genesee River, near the village of Geneseo, New York. When the white man first saw it, it was the patriarch of the Genesee Valley, and was so revered by the Senecas that they named the beautiful savannah around it and their village near it "Big Tree." It also gave name to an eminent Seneca chief, the coadjutor and friend of Corn-planter, Half-town, Farmers-brother, and other great leaders of the warlike Seneca nation, when Sullivan, with a chastising army, swept so ruthlessly through their beautiful land in the early autumn of 1779, annihilating villages, and leaving somber tracks of desolation behind him, that Washington, "chief of the pale-faces," who was held responsible for the act, was called, like Demetrius of old, An-na-ta-kau-les, or the "Town-Destroyer." "When your army entered the Six Nations," said Corn-planter to Washington in 1792, "we called you 'The Town Destroyer;' and to this day, when that name is heard, our women look behind them and turn pale, and our children cling close to the necks of their mothers." The Big Tree was an oak; and in the summer of 1857, a few weeks before its destruction, its appearance was a fair counterpart of another thus described by Spencer:

"A huge oak, dry and dead,  
Still clad with reliques of its trophies old;  
Lifting to heaven its aged, hoary head;  
Whose feet on earth had got but feeble hold,  
And half-disboweled stands above the ground,  
With wreathed roots and naked arms."

It was in evident peril from the abrading current of the Genesee. Little of it was left but its mighty trunk. A vigorous elm, that had germinated beneath its roots, had clasped one of its larger but decayed branches, and seemed like another Aeneas piously bearing old Anchises in its filial arms. But it was a treacherous friend. It robbed the old tree of its needed sustenance, and, hour by hour, while it twined its young branches lovingly among the gnarled ones of the patriarch, it drew from it its life-blood. The trunk, when measured, was found to be twenty-six feet nine inches in circumference. Its age was doubtless more than a thou-



sand years. During a great flood in the Genesee River, early in November, 1857, the Big Tree and the treacherous elm were swept away, and buried in the bosom of Lake Ontario.

### THE CHARTER OAK.

Doubtless next in age to the Big Tree was the famous Charter Oak, in the city of Hartford, Connecticut, which was standing in the height of its glory, and estimated to be six hundred years old, when the good Hooker and his followers planted the seeds of a commonwealth there. It was upon a slope of Wyllys's Hill. On a stormy night—August 21, 1856—the old oak was prostrated. From pieces of the tree was made a chair now in the Senate chamber of the Capitol at Hartford, for the use of the Lieutenant-Governor. This tree once preserved the written guarantee of the liberties of the then infant colony of Connecticut. In 1687 Governor Andros, whom King James had sent across the sea to be Governor of all New England, appeared before the Connecticut Assembly, then in session in Hartford, and demanded the colony's charter. Tradition tells us that the charter was brought in and laid upon the table. In an instant all lights were extinguished and the room was wrapped in total darkness. Not a word was spoken. The candles were again lighted, but the charter had mysteriously disappeared; and though Sir Edmund searched diligently for it, his search was in vain. Captain James Wadsworth had seized the precious charter and concealed it in a hollow in the trunk of this friendly tree. The charter was not long concealed. James was soon driven from the British throne, and Andros from New England. Eminent English jurists decided that as Connecticut had never surrendered its charter it remained in full force. It was drawn from its hiding place, and the government was immediately re-established under it. From that time until its destruction, Wyllys's venerable tree was known as the Charter Oak. An interesting fact may properly be mentioned in this connection. Charles the Second granted the charter to Connecticut, which was concealed in an oak for its preservation. Charles himself was concealed in a hollow oak eleven years before (1676) for his own preservation, after the battle of Worcester. In honor of his king, and



in commemoration of this event, Dr. Halley, the astronomer, named a constellation in the heavens *Robur Caroli*. The oak may be justly styled a royal tree. Spencer speaks of it as "The builder oak, sole king of forests all." It is an emblem of strength, constancy, virtue, and long life—attributes which ought to be the characteristics of a monarch.

### PENN'S TREATY TREE.

In the summer of 1682 a small vessel called the *Welcome* sailed from England with William Penn and a company of Quakers for the shores of the Delaware Bay and River, on the borders of which lay a broad domain that had been granted to Penn by his sovereign. The settlers received him with great joy when he landed early in October. After making some arrangements with the colonists, Penn proceeded up the river, in November, to Shackamaxon (now Kensington precinct, Philadelphia), and there, under the widespreading, but leafless branches of a venerable elm tree, on the bank of the Delaware, he made a treaty with the Indians, not for their lands, but of peace and friendship, the only treaty never sworn to and never broken. "The Treaty Tree," as the great elm was ever afterward called, became an object of veneration. Penn loved the spot; and twenty years afterward, when he contemplated making his permanent residence in Pennsylvania, he tried to purchase the fine house of Thomas Fairman, by the tree, and the estate around it, considering it, he said, "one of the pleasantest situations on the river for a governor." The venerable and venerated "Treaty Tree" was protected with great care. It was not lofty, but widespread. During a gentle gale, on the night of the 3d of March, 1810, the venerable elm was prostrated. Its consecutive rings proved it to be two hundred and eighty-three years of age. The circumference of its trunk was twenty-four feet. The wood was converted by art into a great variety of forms for preservation. An arm chair was made of it and presented to the venerable Dr. Rush. The Penn Society erected a monument upon its site, with suitable inscriptions, which now stands near the intersection of Beach and Hanover streets, Kensington suburbs. The

venerable Judge Peters, the esteemed personal friend of Washington, thus wrote after the tree had fallen:

"Let each take a relic from that hallowed tree,  
Which, like Penn. whom it shaded, immortal shall be;  
As the pride of our forests let elms be renowned,  
For the justly-prized virtues with which they abound.  
Though time has devoted our tree to decay,  
The sage lessons it witnessed survive to our day:  
May our trustworthy statesmen, when called to the helm,  
Ne'er forget the wise treaty held under the Elm."

## THE WASHINGTON ELM.

All strangers who visit Cambridge, Mass., look with interest upon the remnants of the venerable elm tree under which Washington assumed command of the Colonial army. At about nine o'clock on the morning of the 3d of July, 1775, Washington, accompanied by the general officers of the army who were present, proceeded on foot from the quarters of the commander-in-chief to a great elm tree at the north end of Cambridge common, near which the Republican forces were drawn up in proper order. Under the shadow of that wide-spreading tree Washington stepped forward a few paces, made some appropriate remarks, drew his sword, and formally assumed the command of the army. It stands in the center of a great public thoroughfare, its trunk protected by an iron fence from injury by passing vehicles, which for more than a century have turned out for this tree. But it is rapidly decaying, and the Cambridge park commissioners say that it will be impossible to save it more than a few years longer. A short time ago workmen went over the tree and cut off a considerable amount of dead wood, and there is not very much left to keep alive. It is intended to make a thorough overhauling of the tree this spring and to do everything possible to preserve it.

## UNDER THE WASHINGTON ELM, CAMBRIDGE.

APRIL 27, 1861.

Eighty years have passed, and more,  
Since under the brave old tree  
Our fathers gathered in arms, and swore  
They would follow the sign their banners bore,  
And fight till the land was free.

Half of their work was done,  
 Half is left to do—  
 Cambridge, and Concord, and Lexington!  
 When the battle is fought and won,  
 What shall be told of you?

Hark!—'tis the south wind moans—  
 Who are the martyrs down?  
 Ah, the marrow was true in your children's bones  
 That sprinkled with blood the cursed stones  
 Of the murder-haunted town!

What if the storm-clouds blow?  
 What if the green leaves fall?  
 Better the clashing tempest's throe  
 Than the army of worms that gnawed below;  
 Trample them one and all!

Then, when the battle is won,  
 And the land from traitors free,  
 Our children shall tell of the strife begun  
 When Liberty's second April sun  
 Was bright on our brave old tree.

—Holmes.

Upon the one hundredth anniversary of the day when Washington here took command of the army the citizens of Cambridge held a celebration under the tree, and Mr. Lowell read a poem, of which the following is the third part:

"Beneath our consecrated elm  
 A century ago he stood,  
 Famed vaguely for that old fight in the wood  
 Whose red surge sought, but could not overwhelm  
 The life foredoomed to wield our rough-hewn helm—  
 From colleges where now the gown  
 To arms had yielded, from the town,  
 Our rude self-summoned levies flocked to see  
 The new-come chiefs and wonder which was he.  
 No need to question long; close-lipped and tall,  
 Long trained in murder-brooding forests lone  
 To bridle others' clamors and his own,  
 Firmly erect, he towered above them all,  
 The incarnate discipline that was to free  
 With iron curb that armed democracy.  
 Musing beneath the legendary tree,  
 The years between furl off: I seem to see  
 The sun flecks, shaken the stirred foliage through,

Dapple with gold his sober buff and blue  
 And weave prophetic aureoles round his head  
 That shines our beacon now nor darkens with the dead.  
     A man of silent mood,  
 A stranger among strangers then,  
     How art thou since renowned the Great, the Good,  
 Familiar as the day in all the homes of men!  
 The winged years, that winnow praise and blame,  
 Blow many names out; they but fan the flame  
 The self-renewing splendors of thy fame."

### LIBERTY TREES.

It was the custom of our New England ancestors to plant trees in the early settlement of our country, and dedicate them to liberty. Many of these "Liberty Trees" consecrated by our forefathers are still standing. "Old Liberty Elm" in Boston was planted by a schoolmaster long before the Revolutionary War, and dedicated by him to the independence of the colonies. Around that tree, before the Revolution, the citizens of Boston and vicinity used to gather and listen to the advocates of our country's freedom. Around it, during the war, they met to offer up thanks and supplications to Almighty God for the success of the patriot armies; and after the terrible struggle had ended the people were accustomed to assemble there year after year, in the shadow of the old tree, to celebrate the liberty and independence of our country. It stood till within a few years, a living monument of the patriotism of the people of Boston, and when at last it fell, the bells in all the churches of the city were tolled, and a feeling of sadness spread over the city and State of Massachusetts, and in fact the whole United States felt a thrill of lofty patriotism and sad devotion when the news was spread over all the land that the Old Liberty Elm had fallen. A monument imperishable now marks the spot where the old tree stood.

### THE RHODE ISLAND SYCAMORE.

The voyager up Narragansett Bay from Newport to Providence will observe the bald appearance of Rhode Island. The absence of forests, or large trees singly or in groups, excites curiosity and commands remark. Doubtless few travelers are aware that this baldness is the effect of the desolation wrought by the British



while for three years they occupied Rhode Island. Necessity and wantonness went hand in hand in the work of demolition; and when in October, 1779, they left the Island, one solitary tree, an aged sycamore, was all they had left of stately groves and patches of fine forest that had beautified the island. That majestic sycamore was doubtless many hundred years old. It may have been there when the Scandinavian sea kings trod the forests around it. It was there when the Pilgrims landed at Plymouth, and when Roger Williams seated himself at Providencè, that he might enjoy perfect freedom in the wilderness. No doubt the eyes of Philip of Mont Hope, and Canonchet of Canonicut, of Witamo, and Miantonomi of the beautiful Aquiday, have looked upon that patriarch, which stood upon that gentle eastern slope of the island, a solitary survivor of the primeval forest. One who saw the tree a few years before it fell thus describes it: It was thirty-two feet in circumference within twelve inches of the ground. The storm had riven its trunks and topmost branches, and it was the picture of a desolated Anak of the woods; yet it seemed to be filled with vigor that promised it life for centuries to come. The tree finally became rotten at the heart and blew down, probably in the September gale of 1869. It stood upon the estate of Vaucuse, the property of Thomas R. Hazard, between his fine mansion and the Seaconnet or Eastern Channel. Seaconnet Channel, just below Vaucuse, was the scene of one of the most dashing exploits of the Revolutionary War. The British had blocked it up with a floating battery, the *Pigot*, armed with twelve eight-pounders and ten swivels. Captain Silas Talbot undertook the capture of the *Pigot*. Embarking sixty men on the *Hawk*, a coasting schooner, armed, besides small arms, only with three three-pounders, he sailed down under cover of darkness, grappled the enemy, boarded, drove the crew below, coiled the cables over the hatchway to secure his prisoners, and carried off his prize to Stonington. The destruction of wood on Rhode Island at that time was the cause of great distress to the loyal inhabitants who returned at the opening of the severely cold winter of 1780. Fuel was so scarce that wood sold in Newport for twenty dollars a cord.



## "THE CARY TREE."

"The Cary Tree," planted by Alice and Phoebe Cary. As these sisters were returning from school one day they found a small tree in the road, and carrying it to the opposite side dug out the earth with sticks and their hands, and planted it. When these children had grown to womanhood and removed to New York City, they never returned to their old home without paying a visit to the tree they had planted. That tree is the large and beautiful Sycamore which one sees in passing along the Hamilton turnpike from College Hill to Mount Pleasant, Hamilton County, Ohio.



# The Trees Dream

Elizabeth H. Thomas.

Mrs. Carrie B. Adams.

1. O little green tree, so slim and small  
 2. Oh, tree dreaming now, with the  
 Let the breeze of the  
 Standing under the schoolhouse wall  
 pleasant days that are to be.

Planted there upon Arbor Day.  
 Of the robins & bluebirds that  
 Every spring will  
 Tell us what are you doing, say?  
 come and sit in my  
 branches and sing. Oh.

quiet: you stand and so  
 plenty of company  
 still you keep I  
 I shall see many  
 really believe you have  
 gay green trees said the  
 gone to sleep.  
 Let the breeze.

## INDIANA'S FORESTS.

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Indiana is a natural forest region. Its condition of climate and soil is highly favorable to a varied arboreal growth. Few continuous areas of greater extent in this country produce as many species of trees as are found within the limits of Indiana. The variety of soils in the State is an effective element in producing this diverse and abundant tree growth. But what is seen now of the trees is not to be compared with the timber and trees of the State in its earlier time.

At one time forests of dense, tall trees, the limbs of which were so interwoven that it was but occasionally that the sunlight could find entrance, covered the greater part of the State. There was but little undergrowth, and the heaviest woods cast a dense and gloomy shadow. Mile upon mile stretched these giant columns of trees and green arches reared by nature through centuries.

Originally seven-eighths of the 21,637,760 acres comprising the area of the State was covered with this dense growth of trees. Many of the most valuable species reached their maximum in every way within the bounds of the State. It was seldom that this broad expanse was broken, except by streams, lakes, Indian camps, the patches of prairie and the sloughs of the northern part of the State toward Lake Michigan.

The southern part of the State was more heavily timbered. No part of America could show more magnificent deciduous forest trees than once existed in the valleys of the Wabash and White-water rivers. The trees decreased in size proceeding to the northward and the most inferior were found around the lakes. The forest was composed of many kinds of trees growing indiscriminately.

White oak, ash, hickory, maples, beech, elm, cottonwood and lin were the prevailing kinds, and they varied much in making the proportion. The yellow poplar and the black walnut were numerous and frequently were the largest trees found in this primitive



forest. More than four species of trees in the Wabash valley attained to a height of more than one hundred feet. The tallest recorded tree was a yellow poplar, one hundred and ninety feet in height, twenty-five feet in circumference and ninety-one feet to first limb. Among the oaks were to be found many giant trees. The highest recorded oak was a scarlet specie. It grew in the southern part of the State and measured one hundred and eighty-one feet in height. The sweet buckeye grew to goodly dimensions. One of this specie grew in Rush County, and was said to have been when standing twenty-seven and three-fourths feet in circumference and ninety feet to the first limb. The celebrated buckeye canoe of the Harrison presidential campaign of 1840 was made from this historic tree.

The walnut grew abundantly and in frequent groves containing hundreds of trees, many of which were from four to six feet in diameter and one hundred and fifty feet high. The sycamore grew in the valleys, and was known to reach a diameter of ten feet and a height of one hundred and fifty-five feet. It is but seldom that a tract of virgin forest can be found in the State at the present-time. There are, however, a few good forests still remaining within the State.

The list of trees following contains the names of nearly all the indigenous trees common to the State:

<i>Common Name.</i>	<i>Latin Name.</i>
White Oak.....	Quercus Alba.
Red Oak.....	Quercus Rubra.
Scarlet Oak.....	Quercus Coccinea.
Pin Oak.....	Quercus Palustris.
Chestnut Oak.....	Quercus Muhlenbergii.
Swamp White Oak.....	Quercus Bicolor.
Barker Oak.....	Quercus Michauxii.
Burr Oak.....	Quercus Macrocarpa.
Texan Red Oak.....	Quercus Texana
Black Oak.....	Quercus Velutina.
Spanish Oak.....	Quercus Digitata.
Barren Oak.....	Quercus Marylandica.
Willow Oak.....	Quercus Phellos.
Shingle Oak.....	Quercus Imbricaria.
Swamp Oak.....	Quercus Lyrata.
Post Oak.....	Quercus Minor.
Chinquapin Oak.....	Quercus Acuminata.
White Elm.....	Ulmus Americana.
Hickory Elm.....	Ulmus Racemosa.

<i>Common Name.</i>	<i>Latin Name.</i>
Red Elm.....	Ulmus Fulva.
Black Walnut.....	Juglans Nigra.
White Walnut.....	Juglans Cinera.
Pecan.....	Hicoria Pecan.
Swamp Hickory.....	Hicoria Minima.
Shellbark Hickory.....	Hicoria Ovata.
Shellbark Hickory.....	Hicoria Laciniosa.
White Heart Hickory.....	Hicoria Alba.
Small Fruited Hickory.....	Hicoria Microcarpa.
Pignut Hickory.....	Hicoria Glabra.
Buckeye.....	Ascelus Glabra.
Canoe Birch.....	Betula Papyrifera.
Red Birch.....	Betula Nigra.
Sweet Birch.....	Betula Lenta.
White Ash.....	Fraxinus Americana.
Green Ash.....	Fraxinus Lanceolata.
Blue Ash.....	Fraxinus Quadrangulata.
Black Ash.....	Fraxinus Nigra.
Yellow Poplar.....	Liriodendron Tulipifera.
Linden.....	Tilia Americana.
Sugar Maple.....	Acer Sachernium.
Black Sugar Maple.....	Acer Nigrum.
Red Maple.....	Acer Rubrum.
Black Locust.....	Robina Pseudacacia.
Honey Locust.....	Gleditsia Tricanthos.
Wild Plum.....	Prunus Americana.
Wild Black Cherry.....	Prunus Serotina.
Persimmon .....	Diospyros Virginiana.
Flowering Dogwood.....	Cornus Florida.
Hardy Catalpa.....	Catalpa Speciosa.
Sassafras.....	Sassafras Officinale.
Hackberry.....	Celtis Occidentalis.
Red Mulberry.....	Morus Rubra.
Sycamore.....	Platanus Occidentalis.
Iron Wood.....	Ostrya Virginica.
Chestnut.....	Castanea Sativa.
Beech.....	Fagus Americana.
Cottonwood .....	Populus Deltoides.
White Pine.....	Pinus Strobus.
Yellow Pine.....	Pinus Mitus.
Bald Cypress.....	Taxodium Distichum.
Tamarack.....	Larix Americana.
Red Cedar.....	Junipera Virginiana.
Red Haw.....	Crataegus Coccinea.
Red Bud.....	Caesalpinaceae Canadensis.
Black Haw.....	Crataegus Tomentosa.
Black Gum.....	Nyssa Sylvatica.
Tupelo Gum.....	Nyssa Aquatica.
Willows .....	Salix.

## THE AUDUBON SOCIETY.

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As time passes it is seen that our native birds are becoming less in numbers. The familiar birds which once gathered about our homes are rapidly disappearing, and seldom are we cheered by their songs and entertained by their movements. With them have gone many added interests in life, which can only be enjoyed by fostering the birds.

For the purpose of protecting and fostering our native birds, the Audubon Society has been instituted. It is named in honor of John James Audubon, the first noted student of the birds of America. Indiana has a State society, besides many local societies, in which both young and old are taking part. It is gratifying to note that many schools are perfecting organizations and clubs for the protection and preservation of birds.

These organizations can do a vast amount of good in the way of preventing and discouraging the destruction of and cruelty to birds. No better line of nature work could be instituted than the study of birds as to their coming and going, plumage, mating, nesting, feeding habits, songs, colors, manner of flying and walking, bathing and the regularity of all habits.

It is desired that the teachers and pupils shall lend their united action to this most commendable undertaking.

The following is an article written by Prof. Lawrence Bruner, of the University of Nebraska, entitled, "A Plea for the Protection of our Birds:"

The fact that insect depredations are increasing in extent each succeeding year makes it plain to us that something must be done to prevent it, and that quickly. We have found to our sorrow, that although we are continually making increased efforts to destroy these pests, our efforts avail but little, and the destruction of our crops goes on. What, then, is to be done? How can we be released from this ever increasing struggle for existence?

The answer is plain. Heed the advice of the naturalist who has made a study of the life-histories of the various other living creatures in the

world about us. Do not condemn what he says without at least examining into it a little.

In his desire for bird protection the naturalist is not prompted by sentiment alone—far from it! Although from the sentimental standpoint solely the friend of birds would have sufficient grounds for making such a request.

But if we can not take up the subject of bird protection from the humane standpoint, if we have no chord of sympathy or sense of honor remaining, are we willing to adopt business principles in our dealings with the birds?

It is needless here for me to state that the insect life about us is numerous and varied. We all know this to be too true. Nearly, if not quite, nine-tenths of all animal forms belong here, while the individuals of many kinds are incalculable. We know also that their powers of reproduction are simply wonderful, being limited only by the amount of food available, etc. Now the disproportionate number of birds, on the other hand, with their "universal distribution, the remarkable locomotive power which enables them readily to escape unfavorable conditions, and their higher rate of life, requiring for their maintenance an amount of food relatively enormous," give to them a significance which few seem ever to have realized.

Briefly told, the economic relation of birds to man lies in the services which they render in checking the undue increase of insects, the devouring of small rodents, in destroying the seeds of noxious weeds, and by acting as scavengers on land and water.

Those who have studied the subject carefully have estimated that a loss of nearly \$400,000,000 is sustained annually by the cultivators of the soil from insect ravages in the United States and Canada. This does not include the damage done to ornamental shrubbery, shade, and forest trees, nor to the grasses growing on our prairies. "But if insects are the natural enemies of vegetation, birds are the natural enemies of insects."

"In the air swallows and swifts are coursing rapidly to and fro, ever in pursuit of the insects which constitute their sole food. When they retire, the night-hawks and whip-poor-wills will take up the chase, catching moths and other nocturnal insects which would escape day-flying birds. Fly-catchers lie in wait, darting from ambush at passing prey, and with a suggestive click of the bill returning to their post. The warblers, light, active creatures, flutter about the terminal foliage, and with almost the skill of a humming-bird, pick insects from the leaf or blossom. The vireos patiently explore the under sides of leaves and odd nooks and corners to see that no skulker escapes. The woodpeckers, nuthatches, and creepers attend to the trunks and limbs, examining carefully each inch of bark for insects' eggs and larvae, or excavating for the ants and borers they hear within. On the ground the hunt is continued by the thrushes, sparrows, and other birds that feed upon the innumerable forms of terrestrial insects. Few places in which insects exist are neglected; even some species which pass their earlier stages or entire lives in the water are preyed upon by aquatic birds."\*

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\*Chapman, in "Bird Life."



In nearly every case where the food habits of our birds have been carefully studied, do we find that the good done far exceeds the possible harm that might be inflicted by our birds. Allowing twenty-five insects per day as an average diet for each individual bird, and estimating that we have about one and one-half birds to the acre, or in round numbers 75,000,000 birds in Nebraska, there would be required 1,875,000,000 insects for each day's rations.

Again, estimating the number of insects required to fill a bushel at 120,000, it would take 15,625 bushels of insects to feed our birds for a single day, or 967,500 bushels for 60 days, or 2,343,750 bushels for 150 days. These estimates are very low when we take into consideration the numbers of insects that various of our birds have been known to destroy in a single day. For example, the stomachs of four chickadees contained 1,028 eggs of cankerworms. Four others contained about 600 eggs and 105 mature females of the same insect. The stomach of a single quail contained 101 potato beetles; and that of another upwards of 500 chinch bugs. A yellow-billed cuckoo shot at six o'clock in the morning contained forty-three tent caterpillars. A robin had eaten 175 larvae of *Bibio*, which feed on the roots of grasses, etc., etc.

Birds, like all other animals, feed upon that food which is most readily obtained, hence the insectivorous kinds destroy those insects which are most numerous—the injurious species.

Estimating that there is a single grasshopper, katydid, or cricket to each square yard of surface, it would require at least 650,000 bushels of these insects to cover the State. Not taking into account any of the myriads of other insect forms nor the rapid rate of reproduction which is going on among them, these alone would be nearly one-third enough insect food for our birds during the year. This being true, it is plain that at least twice as many birds could find the proper insect food in our State each year.

A perusal of the various works that have been written on the economic relations of birds to man will support the statement that, if we were deprived of the services of birds, the earth would soon become uninhabitable.

In addition to the actual good that birds do as recorded above in the destruction of noxious insects, many of them are engaged for at least one-half of the year in hunting out and devouring the seeds of various weeds and other, to us, useless plants. Such is the mission of the various sparrows, snowbirds, juncos, and long-spurs which often occupy our fields in flocks of thousands during the winter months.

If, after ascertaining such truths as the above regarding birds, we continue to slaughter them, it is not due to thoughtlessness on our part. We do it wilfully and maliciously. The schoolboy may thoughtlessly rob a bird's nest or kill a bird or two. It is the duty of teacher and parent alike to teach him better, to show him how wrong it is to destroy life uselessly. It is especially their duty to prevent the destruction of birds. If each schoolboy in the State of Nebraska were to rob a nest of say five bird's eggs, what would be the result? Yet the making of bird-egg collections is getting to be such a "fad" that almost every boy enters into it more or less zealously at some time or other. Some single collectors in a single season take 500 or more eggs. This should be stopped. We can study

birds and their nests without destroying either. A live bird is more interesting than a dead one. An egg left in a nest where it will in due time become a live creature is of more interest than an empty egg shell.

We, as citizens of the United States, pride ourselves on being highly civilized and humane. We are in some directions, in others not. We also claim to be intensely practical and business-like in everything. Are we?

In Indiana alone nearly three hundred and fifty different species of birds are found. Many of these species represent large numbers while some have become almost extinct. From morning till night these birds are working for us during their entire life. Constantly they are searching for and devouring the creatures that destroy fruit, vegetables and foliage, and feeding on seeds of noxious weeds. It is a lamentable fact that many persons are not aware that the birds are toiling for them, and kill them in the belief that they are thieves and intruders of the most dangerous character.

Instances are rare in which birds do harm, except in the case of the English sparrow. Birds that seem to be pecking at and injuring fruit are only seeking for worms, and the harm attributed to them is simply imaginary and not founded on fact.

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Tree planter and teacher united in one shall be declared the best benefactor of modern times—the chief provider for posterity.—J. Sterling Morton.

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He who plants an oak looks forward to future ages, and plants for posterity.—Washington Irving.

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What conqueror in any part of life's battle could desire a more beautiful, a more noble, or a more patriotic monument than a tree planted by the hands of pure and joyous children, as a memorial to his achievements? —B. J. Lossing.

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The man who builds does a work which begins to decay as soon as he has done, but the work of the man who plants trees grows better and better, year after year, for generations.

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The teacher in charge of a school who does not in any way observe Arbor Day should seek a new field of employment.

## JOHN JAMES AUDUBON.

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John James Audubon, the naturalist, was born on a plantation near the city of New Orleans, La., May 4, 1780. His father was an officer in the French navy and owned a plantation in the then French colony. In early childhood he manifested a deep interest in birds and studied closely their habits. He received the best education that he could be given in America and then completed at Paris, France, where he was sent in 1794.

At Paris he studied design under the great artist, David, who was an eminent painter. In 1789, at the age of seventeen, he returned to the United States and began a career of farm life on a farm given him by his father, in eastern Pennsylvania, but he kept up his favorite study of birds. He was married in 1808 to Miss Lucy Bakewell and sold his farm and engaged in business at Louisville, Ky. About two years later he resumed active study of birds and spent his time making extensive excursions through dense forests of the Southern and Southwestern States. He made colored drawings of all species of birds which he found. He removed with his family to Hendersonville on the Ohio River and remained there several years pursuing a study of the birds of the region frequently coming across the river into Indiana.

Mr. Audubon became in very poor circumstances. He had lost all his property and many times, the history of his life tells us, he was without a dollar to purchase the necessities for his family. He became a teacher and taught music, French, drawing, painting, dancing and fencing. In 1824, while on a visit to Philadelphia, he met Charles Lucien Bonaparte, who persuaded him to publish a work on ornithology. He went to London and began the work of publication in 1826. The work was not completed for more than ten years.

This excellent publication consisted of ten volumes, illustrated with 448 fine colored plates of 1,065 species of birds of natural

# The Robin.

Celia Kessler

Mrs Carrie B. Adams

*moderato.*

1 In the tall elm trees sat the robin bright thro' the  
2 for oh the fields were green and gold And the  
3 them low and clear called the happy bird And.

rain y A. and day And he  
bless full life that staid In the  
rapturously he sang hill

carolled clear with a pure delight, In the face of the sky so gray And the  
Earth's wide breast was ... pure and warm In the heart of the little bird & the  
wood and meadow and river side with- pre-belliant echoes rang. But the

*rit.*

*Ritenu*

sol-ve rain thro' the blossoms dropped And fell on the robin's coat And his  
rain cloud left, ed, the sun set light stream'd into over valley and trees, As the  
sun dropped down in the quiet- wait and the hushed his song at Past As.

*a tempo*

brave red breast, but he never stopped I Piping his cheerful note  
pleasure of heaven this-land your wings- And the warm south wind was  
nature soft-ly- sank to rest And the a- and day had still  
passed





size. The work was divided into two divisions of five volumes each of letter press and engravings. It is pronounced the most magnificent work ever published on ornithology. One hundred and forty-four persons subscribed for the work and it was the means of placing Audubon and his family in good circumstances. It is said that there are eighty copies of the book in America, each of which would bring on the market now from \$1,500 to \$2,000. He was the first man to devote his life to the study of the birds of America and his works are known all over the world.

He visited back and forth several times between the United States and Europe in the interest of others of his publications, for he did not rest on the laurels of his first success, but he finally settled permanently on the Hudson River at Audubon Park, now a part of New York City, and died there January 27, 1851.

## HISTORY AND CHARACTERISTICS OF SPECIAL BIRDS.

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### THE REDBIRD OR CARDINAL GROSSBEAK.

The redbird or cardinal grossbeak is of medium size, being about seven to nine inches in length from tip of tail to point of beak. It is a rich vermilion red color, slightly ashy on the back, black face and throat, reddish bill and brown feet. It is common in Indiana and appears most numerous in spring and fall. They nest in vines and bushes near the ground and brood more than once during the summer.

They appear in early March and begin their merry singing; both sexes sing, but the male is the better singer. They mate early and sing throughout their courtship and as late as September. The female does all the work, though the male is her constant companion in search of material. Because of the many features of beauty this bird is sought and trapped for cages. Its song is varied and long and makes it a pleasant captive, but such should be discouraged by all means. They should be allowed to vary green nature by their ruby presence.

### THE REDBIRD.

Swept lightly by the south wind  
The elm leaves softly stirred,  
And in their pale green clusters  
There straightway bloomed a bird!

His glossy feathers glistened  
With dyes as richly red  
As any tulip flaming  
From out the garden bed.

But ah, unlike the tulips,  
In joyous strain, ere long,  
This redbird flower unfolded  
A heart of golden song!

—Evaleen Stein,

## THE BROWN THRASHER OR BROWN MOCKINGBIRD.

The brown thrasher is of medium size, about ten to twelve inches in length from point of tail to point of bill. It is a reddish brown color above but white streaked with dark brown below, and has two white bars on the wings. It nests in vines and bushes near the ground or sometimes on the ground. The nest is made of leaves, sticks and rootlets. The eggs, usually four to five in number, are greenish or soiled white in color, covered with brown-reddish dots.

The thrasher is a very shy, retiring bird in habit. In its travels it seeks the shelter of thickets and skulks through the close cover. It is seen earliest in river valleys, where it makes its appearance from the first of March to the middle of April. They mate early and return to their old haunts, where the male perches upon the topmost bough of the nearby trees and opens his serenade, which continues by the hour during the early morning and late afternoon. When the courtship is over the singing usually ceases and by June they are seldom seen.

## THE BLUEBIRD.

The bluebird is a beautiful little creature of from five to seven inches in length. The males are bright blue color above, cinnamon on breast and throat and white below. They are common to Indiana, but the English sparrow has driven them away to a great extent. They are the first to appear on the approach of spring, having been seen in February in localities where they migrated.

The bluebird mates early and has been known to be nesting in April. They brood several times during the summer. It is a most domestic bird in habit and delights to nest in the orchard, garden, grove and yard. It builds its nest in the holes of trees and posts and will build in boxes prepared for it. Their eggs usually number four to six, and are small and pale blue in color. The food of this bird is insects mostly. Encourage it by offering it a house and protection.



## THE BLUEBIRD.

I know the song that the bluebird is singing  
 Out in the apple tree, where he is swinging.  
 Brave little fellow! the skies may be dreary,  
 Nothing cares he while his heart is so cheery.  
 Hark! how the music leaps out from his throat;  
 Hark! was there ever so merry a note?

Listen a while and you'll hear what he's saying,  
 Up in the apple tree swinging and swaying.  
 "Dear little blossoms down under the snow,  
 You must be weary of Winter, I know;  
 Hark! while I sing you a message of cheer,  
 Summer is coming and spring time is here!

"Dear little snow-drop! I pray you arise;  
 Bright yellow crocus! come open your eyes;  
 Sweet little violets, hid from the cold,  
 Put on your mantles of purple and gold;  
 Daffodils! daffodils! say, do you hear,  
 Summer is coming and spring time is here!"

## THE YELLOW THISTLE BIRD.

The American Goldfinch is known in some localities as "Yellow Bird" and Thistle Bird. They are found all year in this State. In summer the males wear attractive colors—bright yellow, with top of head, wings and tail black. The females are duller. In winter both sexes are duller than the females in summer. They fly through the air with a galloping motion, repeating their call "Per-chic-o-ree" as they go. They frequent lettuce patches, hemp stalks and thistles when the seed is ripe.

## THE YELLOW THISTLE BIRD.

In the clearin', where the thistle, an' poke an' fireweed,  
 Place their feet among the ashes and sow their harvest seed,  
 Ther' the little yellor thistle bird goes swingin' through the sky,  
 Like they's ridin' on the ocean when the waves were wavin' high.  
 An' they look like dandelion blows, got loose and given wings  
 An' a voice (made up ter me, it seems, of the finest fiddle strings);  
 An' they dance among the posies with the snarlin' bumblebee,  
 Cuttin' up their shines an' capers, that make me laf to see.  
 An' there hain't a bird that's mean enough to tech the little mites,  
 An' I kinder think they're lookin' out ter see they get their rights.

They're like children in the clearin', playin' they was married folks,  
 For they never seem in airnest, but air allers full o' jokes.  
 An' they look so outer place like, 'mong the stumps'n' burnin' logs,  
 With the hot wind whirlin' madly till your very breath it clogs.  
 I stop sometimes to watch them, an' they rest me like a cup  
 Uv wader cool and sparklin' jest from the spring dipped up;  
 An' sometimes my gold-haired baby, with my dinner in a pail,  
 Comes to me, an' I leave the wedge still stickin' in the rail—  
 An' we set down clost together like es if we's only one,  
 An' we eat 'n' laf, 'n' visit till ther' isn't left a crum'.  
 Then she wanders 'round the clearin' jest as busy as I am,  
 An' my work seems twice as easy, 'n' I feel so stout 'n' calm.  
 An' the yeller birds fly near her, jest es if they knowed her too,  
 An' wor hankerin' fer her lovin' es I half suspect they do;  
 While I get the birds 'n' babies all kinked up in my heart,  
 Fer when they're nigh about me, I kent keep them quite apart.  
 But the yeller birds keep singin', an' my gal has wandered home,  
 An' I get my thoughts unfangled, which, sometimes, may like to roam.  
 They make me think of babies in a home wher' all the rest  
 Air old, 'n' gray, 'n' wrinkled, 'n' in ugly homespun drest,  
 Er a thought thet God made livin' when He blest the waitin' band  
 Of children, an' upon their heads he laid his lovin' hand.

- S. B. McManus.

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Arbor Day will make the country visibly more beautiful year by year. Every school district will contribute to the good work. The schoolhouse will gradually become an ornament of the village, and the children will be put in the way of living upon more friendly and intelligent terms with the bountiful Nature which is so friendly to us.—George William Curtis.

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Our yards, our schoolhouse yards, and the resting places of our dead, should not be neglected, but should be adorned with nature's own beautifiers—the trees.—Emma F. Bates.

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A man does not plant a tree for himself; he plants it for posterity; and sitting idly in the sunshine, I think at times of the unborn people who will to some extent be indebted to me. Remember me kindly, ye future men and women.—Alexander Smith.

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This public education renders possible the system of fruit trees by the roadside, the beautiful little park and flower garden at the railway station, and tree and shrub groupings and effects everywhere, such as we can not reach with our present public sentiment.—J. L. Budd.

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The best and highest thing a man can do in a day is to sow a seed, whether it be in the shape of a word, an act or an acorn.—James Boyle O'Reilly.

## OUTLINE PROGRAM.

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1. Devotional Exercises.  
Song. Scripture Reading and Prayer. Song.
2. Reading Proclamation and Other Formal Documents.
3. Songs. Arbor and Bird Day.
4. Literary—  
Essays :
  - a. Arbor Day and Purposes.
  - b. Bird Day and Purposes.
  - c. Benefits of Trees and Birds.
  - d. How and When to Plant and Care for Trees.
  - e. The Best Trees and Shrubs to Plant.Recitations :
  - a. Poems About Trees, Birds, Flowers and Patriotism.
  - b. Gems About Trees, Birds, Flowers and Patriotism.Songs :
  - a. About Trees, Birds, Flowers and Patriotism.
5. Brief Reports of Observations by Pupils—
  - a. Of Finely Ornamented Home Lawns.
  - b. Of Finely Ornamented School Grounds.
  - c. Of Finely Shaded Highways and Drives.
  - d. Of Fine Specimen Trees Along Highways, on Lawns and in the Forest.
  - e. Of Species of Trees in Home Forests.
  - f. Of Dense Forest Tracts in the Vicinity.
6. Short Address—  
Our Duty in Planting Trees and Protecting Birds.
7. Organization of Pupils' Clubs for Planting Trees and Protecting Birds.
8. Planting and Dedication of Trees.

## SUGGESTIONS FOR PROGRAMS.

1. Study the material, the conditions and possible participants available before formulating the exercises.
2. Make the program long enough to admit of pleasurable variety, but guard against such length as to kill interest. Diversity and conciseness should be the motto.
3. Have as many patrons as well as pupils on the program as possible. Appeal personally to patrons.
4. Give special emphasis to poems, gems, songs and reports by pupils. Have them commit and speak.
5. Have holes for trees made large and filled with rich soil (not light loam) several days beforehand.
6. Have the club appoint a committee to see that the trees planted are watered and cared for during the year.
7. Select a person for the address who can talk in the realm of the children and is personally liked by them.









WHITE OAK, BUTLER COLLEGE CAMPUS, IRVINGTON, INDIANA.